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ABSTRACT

Designed for use in the evaluation of Title IV Indian Education Projects (Parts A, B, and C), this handbook presents a methodology for evaluation which has been devised specifically to address the structural and substantive variations among Title IV projects in a manner which is flexible, adaptable, and practical. This handbook is designed to accommodate five basic evaluation stages: focusing the evaluation within the project; planning--establishing objectives, components, and costs; measuring the process and products; preparing the data; and reporting the information. Organized by chapters, each stage of the evaluation cycle is discussed in terms of: the overall purposes and description of the stage, together with relevant examples; the steps necessary to realize overall purposes of the stage under discussion; some key questions designed to clarify the procedures necessary to accomplish the steps; and specific procedures, termed key actions to be used in completing steps. Also included within each stage is a set of sample worksheets; each worksheet is directed toward accomplishing a specific task, and these sample worksheets are filled out, illustrating how an evaluator would proceed, using the steps, key questions, and key actions suggested as guideposts for the accomplishment of each task. A brief overview describing use of the handbook is also presented. (JC)

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A HANDBOOK ON EVALUATION FOR TITLE IV INDIAN EDUCATION ACT PROJECTS

RC010301

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

February 13, 1976

Dear Colleague:

The enclosed handbook is sent to you for use in the evaluation of the Title IV Indian Education projects, Parts A, B, and C. It presents a methodology for evaluation which has been devised specifically to address the structural and substantive variations among Title IV projects in a manner which is flexible, adaptable, and practical.

The intent of this evaluation is to fulfill the two main information needs of the Indian Education Act: to apprise those of you who are working at the local level of how well your program is or is not working; and to provide Congress and the U.S. Office of Education with an accurate understanding of the overall efficacy of Title IV projects in meeting the needs of Native Americans. The implementation of an evaluation methodology such as is set forth in this handbook is optional and it is hoped it will be used by you to assist you in evaluating your efforts.

The handbook should be of much help in measuring the strengths and weaknesses of the projects, and it may be put to use at whatever stage the project is in.

Please let us know how you find this handbook as you use it in the forthcoming time. If there are any problems or information needs concerning its application, please do not hesitate to contact us by writing to:

Office of Indian Education
400 Maryland Avenue, S.W.
Room 4047
Washington, D.C. 20202

We look forward to a continuing relationship with you in furthering the aims of Indian education.

Sincerely,

William G. Demmert, Jr.
Deputy Commissioner
Office of Indian Education

A HANDBOOK ON EVALUATION FOR TITLE IV INDIAN EDUCATION ACT PROJECTS

Prepared for:

The U.S. Office of Education
Department of Health, Education and Welfare
Contract No. OE C-73-7058

By:

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PREFACE

This Handbook, developed by CPI Associates, Inc., under Contract Number OE C-73-7058, is intended to be used as a tool by local school districts in fulfilling evaluation requirements under Title IV Indian Education Act grants. Not only may it be adopted to assess the specific quality of the individual projects, thereby serving the needs of school administrators, but if followed by all Indian Education projects, it will further the collection of uniform data for the Office of Indian Education. It is hoped that use of this Handbook will facilitate more comprehensive understanding of the dynamics of the program by local school administrators and staff of the Office of Indian Education and thus contribute to the improvement of Indian Education throughout the nation.

The combined efforts of national experts in education evaluation and of evaluators from local school districts were instrumental in developing and refining the Handbook and Handbook Supplement. In the initial stages, the evaluation experts participated in a one-week working conference reviewing evaluation techniques; this groundwork is reflected in the Handbook Supplement, which may be used by local school administrators to increase their knowledge of the methodological issues in educational evaluation.

The Handbook itself was developed in three subsequent conferences with representatives from approximately forty Indian Education projects throughout the country. These representatives assisted in making the Handbook a practical tool by using it in evaluation of their own projects. The final draft was reviewed in a fourth session with a group of ten local school district evaluators and then structured by CPI staff. If the Handbook is followed step-by-step, using the suggested procedures, it will be useful to school systems staff, especially those who have had little experience in evaluating educational programs, and will thus serve both as a "how-to-do-it" guide and a training tool.

The Handbook was made possible through the assistance of Mr. Lawrence LaMoure, who for the first sixteen months of the contract was Project Monitor and Director of Planning and Evaluation for the Office of Indian Education, and by Mr. Herbert Jacobson, who succeeded Mr. LaMoure in these positions during the remainder of the contract. This work would not have been performed without the aid and dedication of the local school representatives and evaluation experts who contributed their knowledge, experience, and energy, and to them, CPI Associates, Inc., expresses its gratitude and appreciation.

A Self-Instruction Handbook on Evaluation: An Overview

To use these instructional materials most effectively, asking and answering the following questions may prove helpful:

1. How can this Handbook be used most effectively by persons who are planning, managing, and evaluating Title IV Indian Education Act Projects?

2. How can the evaluation methods presented in this Handbook assist persons in preparing an application for Title IV Indian Education Act projects?

These and other unanswered questions will be answered as these self-instructional materials are *read*, as they *become familiar* to the reader, are *practiced with*, and as they are *used*.

To begin, a quick reading of these materials to see what they look like is suggested, together with a glance at the blank worksheets (numbered 1 through 19). This will acquaint the reader with the overall form and thrust of the Handbook – the kinds of material it contains, the nature of the tasks to be completed, and the way the tasks are organized for carrying out each phase or stage of the evaluation process.

This overview introduces and describes project design and evaluation and provides a brief guide to the five evaluation phases or stages. The description of these stages, the "how-to" portion of the Handbook, contains detailed instructions and sample worksheets. These sample worksheets have been completed just as project directors might fill them in after they have become familiar with the various tasks and instructions for completing them in the Handbook. The blank worksheets are provided for practice and use as one moves in sequence through the phases or stages of project evaluation.

After becoming acquainted with the overall contents of the Handbook, the reader will be ready to proceed to the mechanics of how the successive evaluation phases may be accomplished. As one moves through these successive stages, working through and completing the sequential

tasks delineated in this Handbook, the application of each reader's particular knowledge and experience will serve as the basis and stimulus for successful completion of these tasks. As the Handbook system becomes familiar through use as an evaluation guide for individual projects, it is hoped that each project director will understand more clearly how the overall quality of each project may be improved.

The projects funded under Title IV of the Indian Education Act are not essentially different from any other organized activity designed to solve a particular problem or meet some defined need. Each has a set of goals and objectives, a structure, a program, and a need for resources to conduct the program. To improve chances of success, Title IV projects need to be evaluated periodically to determine if the program in operation is actually meeting the goals originally set for the project.

Project Design and Management

The basic lines along which most organizations and projects develop are similar. As programs evolve, specific discernible phases can be noted:

- Problem Identification
- Program Design for Problem-Solving
- Implementation of Program
- Evaluation of Program

A project or organization begins the phase of *problem identification* when somebody identifies and defines a problem and suggests a solution involving people, materials, equipment, and facilities. It often happens that projects, or plans for a project, begin because there is complaint, tension, a need for choice, or simply a dream. The idea for a project can come from one person or a group of persons; but almost always the project is designed to meet some defined need or to solve a particular problem.

A *program design* is a plan for solving the problem identified or for meeting the need earlier determined. The plan usually includes a statement of the goals and the steps required to reach the goals. Also, program design includes an estimate of what resources, manpower, materials, money, etc., are required to implement the plan. The program design or plan should be specific enough to assure that progress can be measured.

Implementation of the program includes those activities required to get the program started and operating effectively. These activities may include employment and training of staff, offering classes, purchasing supplies, or providing transportation. It means doing all that is necessary to actually begin the project and to keep it moving toward the goals for which it was established.

The *evaluation function* is an ongoing effort to determine whether or not the project is meeting its objectives. Evaluation may be formal or informal. Whether it is a formal, once-a-year review of the entire project or an informal, continuous process, evaluation is the means by which we learn what is happening with the project. It is from evaluation that we learn what works and what needs improving or changing in order to move the entire project toward its goal.

Project Design and Evaluation Stages

Evaluation is a fundamental component of a Title IV Indian Education Act project. The

presentation in this Handbook of five basic evaluation *Stages* attempts to demonstrate an internally consistent evaluation system, graphically represented in Figure 1.

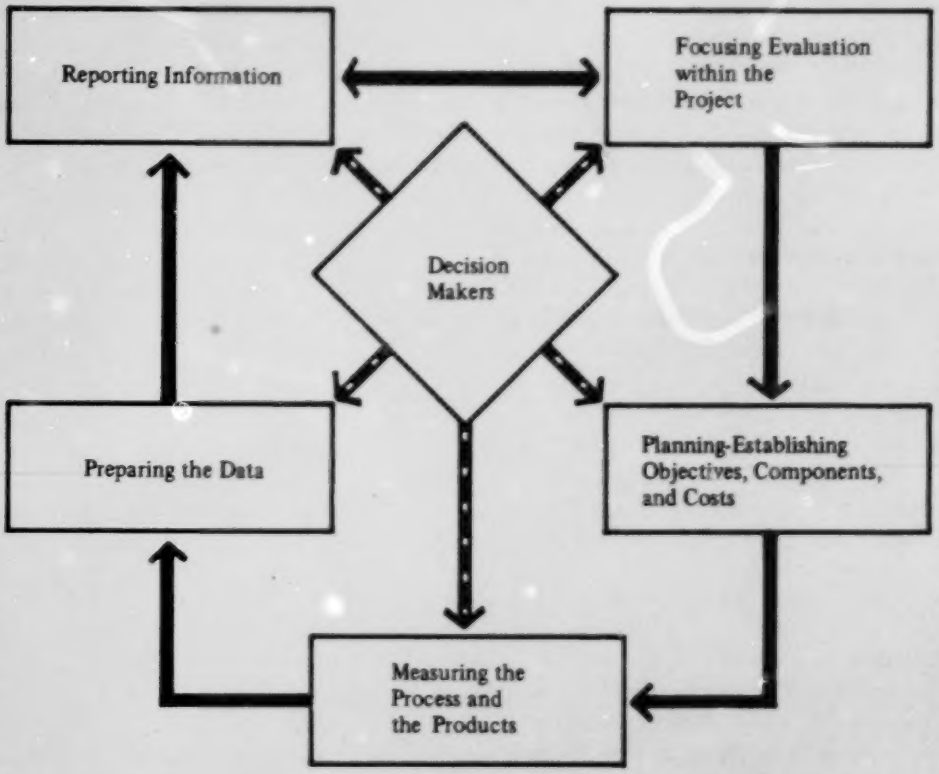

Figure 1: A Cycle of Evaluation Stages

As noted in the Figure, and as will be detailed in the discussion of the evaluation process, there are five basic stages:

Stage 1: Focusing the evaluation effort within the project.

Stage 2: Planning the evaluation – establishing objectives, components, and costs.

Stage 3: Measuring the process and products.

Stage 4: Preparing the data for decision-makers.

Stage 5: Reporting the information.

Inherent in the effective completion of these stages is the involvement of decision-makers, i.e., persons who are in any way connected with the operation of the project.

The involvement of decision-makers is important for at least two reasons. First, if the decision-makers participate in the evaluation stages, particularly Stages 1 and 2, they will obtain a clearer understanding of the project objectives, as well as the means for reaching those objectives. This understanding, which has frequently been absent in previously established Indian Education Act projects and evaluations, can serve to help the decision-makers plan and implement their projects. Second, an evaluation based primarily on conventional measurements is only as good as its foundation. If decision-makers assist in each of the evaluation stages presented here, they can help establish a sound foundation for project objectives, as well as for interpreting measurement and, ultimately, making the most effective decisions.

Some evaluation results will be known in time to redirect some project activities and thus improve the ultimate results of the project. There may, in fact, be several "recycles" – rethinking, revising, redoing – of certain activities with added information from a particular stage of the evaluation process. Hence, the evaluation, through its intricately linked steps and stages, will serve not only to "judge" the end products of the project, but also to assist in the implementation and improvement of the project from its inception.

Organization of Handbook

Each of the descriptions of sequential stages that follows explicates a phase of the evaluation process. Even though these phases or *stages* are treated separately, they are necessarily interdependent, and it is hoped that familiarity with the cyclical nature of these stages will become increasingly helpful for the reader as the journey through the evaluation process proceeds.

For each Stage of the Cycle, the reader will find:

1. A discussion of:
   a. the overall purposes and description of the *Stage*, together with relevant examples;
   b. the *Steps* necessary to realize overall purposes of the Stage;
   c. some *Key Questions* designed to clarify the procedures necessary to accomplish the Steps;
   d. specific procedures, termed *Key Actions* to be used in completing *Steps*.

2. A set of sample Worksheets at the conclusion of the description of each Stage. Each Worksheet is directed toward accomplishing a specific *Task*. These sample Worksheets are filled out, illustrating how an evaluator would proceed, using the *Steps, Key Questions,* and *Key Actions* suggested as guideposts for the accomplishment of each Task.

Stage 1: Focusing the Evaluation within the Project

Purpose

The *Focusing Stage* is intended to produce a written statement of the basic scope and priorities that will govern evaluation. If an evaluation contract is involved, then the terms and conditions of that contract are developed in this Stage. During the Focusing Stage, some basic parameters, necessary for establishing the limits of any evaluation effort, must be specified:

- Name(s) of person(s) who will be primarily responsible for designing and conducting the evaluation.
- List of decision-makers who will be directly provided with information for decision-making.
- A general approach for coordinating local and national information requirements.

KEY POINT For MEETING With PRINCIPAL DECISION-MAKERS

Stage 1: Focusing

- **Step 1** Identify the Title IV application due date.
- **Step 2** Specify the period during which the project is to be planned and initial evaluation design activities are to be conducted.

- **Step 3** Specify the project implementation period for which the Title IV grant is being requested.

- **Step 4** Identify the date for completing the evaluation design.

- **Step 5** Identify by name (if known) the person(s) who will be primarily responsible for conducting the evaluation effort.

- **Step 6** Identify by name (if known) and by title or role the principal decision-makers involved with the project who are to be served by the evaluation effort.

Worksheet 1
PROJECT IDENTIFICATION and CRITICAL DATES
Steps 1 through 6

- **Step 7** Describe the setting in which the project is to be conducted.

- **Step 8** Describe the project.

Worksheet 2
DESCRIPTIVE INFORMATION
Steps 7 and 8

- **Step 9** Identify and provide additional information, decisions, etc., which will help to focus the evaluation effort within the project.

Worksheet 3
ADDITIONAL FOCUSING INFORMATION
Step 9

Key Questions for Step 9

- In general, what evaluation methodology will be followed in designing and carrying out the evaluation effort?

- Will there be or is there likely to be, an outside contract for portions or all of the evaluation effort for the project, if funded?

Note: Check the Federal regulations and USOE application guidelines for requirements about "independent, objective, annual" evaluation of the project. If such guidelines exist,

what will the terms and conditions of such a contract be insofar as they can be specified at this point?

- What cooperation in the evaluation effort is expected from project staff, students, parents, staff of Indian organizations, or others?

- What role in evaluation will be played by the Parent Committee or other Advisory Committees?

- What provisions are to be made for coordinating evaluation efforts with the quarterly, annual, and other reporting requirements of the U.S. Office of Education?

  Note: Again, check the Federal regulations, guidelines, and any other communication on this point coming from the U.S. Office of Education's Office of Indian Education.

When Steps 1 through 9 and Worksheets 1 through 3 have been completed, Stage 1 will have been concluded.

Worksheet #1
Stage 1: Focusing the Evaluation Effort
PROJECT IDENTIFICATION AND CkITICAL DATES

Date: January 7

Title IV application due date: February 15

Project planning period: from Jan 1 to Feb 15

Project implementation (funding) period: from July 1 to June 30

Evaluation design for application must be completed by June 1 (date)

Name of the project: Big Sky Trail Elementary Project

Name(s) of the evaluator(s): Red Sunset: Department of Assessment

List of decision-makers to be served by the evaluation effort:

1. Reading Specialist - Mary O'Day
2. Cultural Awareness Club Sponsor - Richard Leary
3. Art Instructor - Early Dawn
4. Project Director - Robert St. Lawrence
5. Parent Committee Chairman - Shinee Raven
6. Principal - Mark Leman
7. Superintendent - Dr Russel Stoat
8. Chairman - School Board - Dr Leslie Moneybag
9. OIE/USOE - John Smith

Worksheet 2
Stage 1: Focusing the Evaluation
DESCRIPTIVE INFORMATION

Describe the setting in which the project is to be conducted:

Big Sky Trail is an elementary school grades 1-6. The school has 640 pupils - 1/8 of whom are Cherokee Indians. There is a feeling among Cherokee community members that their children are losing knowledge of their culture; they have wanted cultural awareness introduced as part of the Big Sky Trail Elementary School Indian education project. There is a feeling among school teachers and administrators that the Cherokee students are in need of remedial reading.

Describe the project:

The project offers remedial reading to all of the 24 Cherokee Indian students reading 2 years below grade level. It also offers cultural awareness clubs for all Cherokee students who would like to know more about their heritage and culture. As well, there are Cherokee arts and crafts classes for Cherokee students.

1. The evaluation must provide the superintendent with a copy of all reports generated.
2. The School Board Chairman and the Parent Committee Chairman must approve the evaluation report before submission to USOE.
3. The evaluation will occur only at Big Sky Elementary School.
4. Each decision-maker will need help in scheduling reports, but each will need information prior to the final report.

Stage 2: Planning–Establishing Objectives, Components, and Costs

Purpose and General Description

The Objectives, Components, and Costs Stage is designed to produce a description of the project that shows clearly the relationships among the project objectives, the operational components of the project, and the costs of the objectives and components. These must be clarified in the development of application for funding to provide Office of Indian Education staff with an understanding of the project when the application is received, to provide decision-makers with a framework for implementing the project, and to inform the evaluator of the aspects to be measured and analyzed.

- The project objectives are the ends the project is intended to accomplish.
- The project components are the means by which those objectives are to be accomplished.
- The costs are the expenses that are required for implementing the components in order to accomplish the objectives.

This Stage is more complex than Stage 1. Because of its importance, an overview of Stage 2, presenting terms, steps, and examples, follows on the next several pages. Then Stage 2 will be discussed again, but in relation to the specific procedures necessary to carry it out.

When people begin thinking about shaping a project, they form some images about what the project should accomplish and about ways in which those accomplishments can be made real. Eventually, these mental images of the ends and the means of the project are put into words and become what this Handbook calls the *objectives* and *components* of the project, respectively:

- objectives are essentially the same as goals and aims; and

- components of the project are essentially the same as items, approaches, activities, subsystems.

When the objectives and components of the projects are stated, their *costs* can then be estimated in terms of the talent, supplies, equipment, and so forth, that they will require.

These three elements – objectives, components, and costs – provide a useful overall framework for describing the project. For evaluation purposes, such a description provides the evaluator with parameters needed for developing plans for measuring the progress and products of the project. The following example is presented to illustrate the relationship among these three project elements.

Suppose a Title IV, Part A project has the following three objectives and four components as described by the Parent Committee and the Project Coordinator:

- Objective 1: Native American students will learn Native American languages.

- Objective 2: Native American students will learn Native American history.

- Objective 3: Teachers of Native American students will learn Native American history.

- Component 1: A Native American Language Center.

- Component 2: Field trips to visit people and places relevant to Native American history.

- Component 3: Curriculum materials concerning Native American history.

- Component 4: In-service training for teachers of Native American history.

Further, as described by the Parent Committee and the Project Coordinator, the relationships among these objectives and components might be shown as follows:

1. The Language Center (a component) will result in Native American students learning Native American languages (an objective).

2. Field trips (a component) will result in Native American students learning Native American history (an objective).

3. Curriculum materials (a component) will result in Native American students learning Native American history (an objective).

4. In-service training (a component) will result in teachers learning Native American history (an objective).

Suppose the total costs of Components 1-4 above, are estimated as follows for a year:

Component 1		$21,000
Component 2		1,700
Component 3		3,000
Component 4		2,000
	Total	$27,700

When this information is checked against the objectives/components relationships, above, the objectives are found to cost as follows:

Objective 1		$21,000 (Component 1)
Objective 2.		4,700 (Components 2 and 3)
Objective 3		2,000
	Total	$27,700

(Of course a Title IV project may have more or fewer objectives and components than the example, and each project's costs will differ).

Having presented an example to illustrate the basic elements and the linkages among them, a summary of the steps comprising Stage 2 now follows, prior to a thorough explanation of each step.

Stage 2: Planning

- **Step 1** Plan how Stage 2 is to be carried out for the decision-makers to be served.
- **Step 2** Identify the decision-makers' objectives (in priority order) for the project.
- **Step 3** Identify the components of the project that are intended to accomplish the objectives.
- **Step 4** Identify the relationships (linkages) among the objectives and components.
- **Step 5** Identify the estimated costs of the components of the project.

By completing these Steps, the three-part framework of objectives, components, and costs, is developed.

Some additional analysis is usually needed, however, because often the estimated total costs will be unrealistically high or low. The reference point for total costs is the total *estimated* resources or *available* resources for carrying out the project. The available resources will be of two kinds: (1) those that are provided by the Title IV grant, if the application is approved and funded by federal monies, and (2) those from local sources.

In the case of Title IV, Part A, projects, the grant awards are made on a formula basis and applicants are advised in advance of applying what the formula amount will be. In the case of Title IV, Parts B and C, within the amount of funding available to the U.S. Office of Education, applicants' proposals are funded in competition with those of other applicants. The individual project budgets thus are not known in advance, and each applicant must decide on a reasonable budget to request.

What this means is that the decision-makers must sometimes project available resources, both local and federal. Whether the amount is actually available or projected, it is necessary to compare the amounts with the results from completion of Steps, 2, 3, 4, and 5. If the two estimates (costs and available resources) differ, then it will be necessary to go back to those Steps and either revise the objectives, components, and costs, or find ways to increase the available resources.

- **Step 6** Estimate the availability of local and federal resources for the project.

- **Step 7** Compare estimated costs with estimated available resources.

- **Step 8** Review and revise the results of Steps 2 through 6 until estimated costs and estimated available resources are equal.

Usually revisions will have to be made; such adjustments are very common in the planning of projects. Once the revisions have been made, the next step is to estimate the costs by objectives so this information can be included in the Title IV application:

- **Step 9** Analyze costs/resources into budget categories by objective.

By this point, the project should be well-enough defined that time schedules and personnel responsibilities can be established for carrying out the components of the project in order to accomplish the objectives.

Key Questions:

Who is responsible (by name, if possible, and by job classification) for implementing each component of the project, if successfully funded?

According to what time schedules are the components of the project to be completed?

Which objectives are to be accomplished at what points during the project funding period?

This information is important for planning, managing, and evaluating the project because it establishes a framework for accountability and benchmarks for measuring the processes and products of the project. Establishing responsibility and schedules is a function of project management. The evaluator should help develop the information for these tasks so that evaluation activities are integrated with all other components of the project. (A worksheet of models might be followed; one is illustrated by Worksheet 11.)

- **Step 10** Establish project guidelines.

The next issue for the evaluator is to determine whether the objectives, components, and costs need to be defined more specifically before he or she develops measurement plans.

Key Questions:

Does the evaluator know what to observe, specifically, in order to measure effectiveness?

Does the evaluator know exactly what the stated objectives mean?

Does the evaluator know exactly what will be happening when and if the objectives are being accomplished.

Have expected educational achievements been specified in detail?

- **Step 11** Determine whether further defining of objectives, components, and/or costs is necessary.

Further definition of the project is important because *each objective-component relationship has many dimensions* in the minds of the various people to whom that relationship is meaningful.

Consider the example used above in which the Parent Committee and the project coordinator identified the following relationship:

"Curriculum materials concerning Native American history will result in Native American students learning Native American history."

Suppose that in further defining this relationship the Parent Committee and project coordinator were to describe a number of measurable dimensions they believe important for achieving the stated objective:

The number of films owned by the project which are judged by the Parent Committee and project staff as presenting valid Native American History.

The number of Native American students who have viewed each film which presents valid Native American History.

The number of Native American students who produce a creative, heritage-related project which is judged as historically valid by the Parent Committee and project staff.

A list of such dimensions serves to further define the project's objectives and components. Dimensions such as these can be measured during the course of the project, and the resulting information can be reported to the Parent Committee and project coordinator for their use in decision-making.

Only the persons who have an objective-component relationship in mind truly know what they mean by that relationship. Other people can only guess. Therefore, it is recommended that the evaluator work directly with the decision-makers in further defining what the project objectives and components mean. (If, for some reason, it is not possible to directly involve the decision-makers, then the evaluator will have to proceed with the risk that the evaluation effort may produce some information that the decision-makers will not use in their decision-making.)

The basic task is to state how more than one person would recognize when an objective is being accomplished.

Worksheet 11 is designed for use by each decision-maker to specify the components and subcomponents and their related observable dimensions. The evaluator may then "pool" these responses for the development of measurement techniques that will be used in Stage 3: *Measuring the Process and Products.*

Now that an overview of the Stage 2 Planning process has been described, the specific procedural aspects of the Stage necessary to complete the tasks illustrated on sample Worksheets 4 through 11 will be detailed. To carry out Steps 4 through 11, *Key Questions* and *Key Actions* accompany and amplify each Step as aids in completing the corresponding Worksheets.

Stage 2: Planning

KEY POINT for MEETING with DECISION-MAKERS

- **Step 1** Plan how this Stage is to be carried out for all decision-makers to be served.

Key Questions:

Have the decision-makers' objectives already been stated?

Have the decision-makers' concepts of components of the project already been stated?

Have priorities been determined?

Have the relationships (linkages) among objectives, components, and costs been determined?

Do the decision-makers have concerns about the same objectives and/or components?

Are the objectives already sufficiently defined so that the evaluator knows what to measure?

Note: If the answers to all the above questions are "yes," then Worksheets 4, 5, and 6 can be used to record the objectives, components, costs, and linkages and Step 2 below can be omitted. If the answers to the above questions are "no," proceed to Step 2.

- **Step 2** Identify the decision-makers' objectives for the project.

Worksheet 4
OBJECTIVES of the PROJECT
Step 2

Key Questions for Step 2:

What do the decision-makers want the project to accomplish for themselves or for others?

What are their priorities for the objectives?

Key Actions for Step 2:

a. Ask the decision-makers (separately, in small groups, or in one group) to say or write something in response to the question, "What do you want the project to accomplish?"

   Record the answers on paper if they are not provided in writing by the decision-makers.

b. If multiple objectives are intertwined in what the decision-makers have said or written, break them into separate statements, with the decision-makers' approval.

c. If there appear to be other objectives implied by what the decision-makers have said or written, state them and ask the decision-makers to say whether these statements represent additional objectives for the project to accomplish.

d. Make a written list of the decision-makers' objectives from answers received to "a," "b," and "c."

e. Consider additional perspectives on the objectives, if the decision-makers are willing, by asking the decision-makers to review:

   - other people's objectives for the project;
   - previously stated objectives; or
   - information about Indian students' needs developed from personal experience, from panel judgments, or from needs assessments.

   Make changes in the list of objectives from "c" above if the decision-makers desire to make any changes based on these additional perspectives.

f. Since different decision-makers may have somewhat different objectives or different priorities for the same objectives, ask each decision-maker to put his or her objectives into priority order by assigning the number "1" to the most important objective, number "2" to the next most important objective, and so on.

g. Enter the priority-ordered objectives of each decision-maker on Worksheet 4.

Stage 2: Planning

o **Step 3** Identify components of the project from the decision-makers' point of view.

Worksheet 5
COMPONENTS of the PROJECT
Step 3

Key Question for Step 3:

What are the main components of the project that are designed to accomplish the decision-makers' objectives for the project?

Key Actions:

a. Ask the decision-makers (separately, in small groups, or in one group) to indicate what the main components of the project are while the evaluator fills in one or more diagrams

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using Worksheet 5.

Note: Evaluation must be named as one of the components.

b. Consider additional perspectives on the component descriptions by having the decision-makers review their lists of objectives from Step 2 and note whether any other components are necessary to accomplish those objectives; if so, add those components to the diagrams.

Note: Sometimes at this point a decision-maker may notice that some of the objectives previously discussed have not been included, or he or she may be led to consider new objectives through the process of specifying existent objectives and/or components and costs. If additional objectives are consequently suggested by a decision-maker, they should be added to his or her list in revised priority order.

c. Ask each decision-maker to assign a priority order, if possible, to the components, independent of the priority order of the objectives. Enter the priority rank of each main component in the small box in the upper left-hand corner of the diagram for the decision-maker.

Stage 2: Planning

- **Step 4** Identify the relationships (linkages) among the objectives and components.

Worksheet 6
OBJECTIVES/COMPONENTS
LINKAGES
Step 4

Key Question for Step 4:

Which components are intended to accomplish which objectives, according to each decision-maker?

Key Actions:

a. Using the matrix (grid) as on Worksheet 6, enter the codes for the Objectives in priority order (0-1, 0-2, etc.) across the top row and the Components in priority order (C-1, C-2, etc.) along the left column.

b. Ask the decision-makers to say which components are intended to accomplish which objectives and mark Worksheet 6 appropriately.

- **Step 5** Develop cost estimates for each component of the project by budget categories to be used in the Title IV application.

  Enter the amounts and compute totals on Worksheet 7.

Worksheet 7
COST ESTIMATION by PROJECT COMPONENTS
Step 5

- **Step 6** Estimate the availability of local and federal resources for the project; enter the amounts and compute the totals on Segment A of Worksheet 8.

  Note: A formula amount will be announced to prospective Part A applicants in advance as the basis for the federal portion of their applications. Other applicants will have to compute what they consider to be a reasonable federal budget request based on the proposed project design.

Worksheet 8
ESTIMATED AVAILABLE RESOURCES and COMPARISONS with ESTIMATED COSTS
Steps 6 and 7

- **Step 7** If anticipated funds are different from the cost estimates on Worksheet 7, review and revise the results of Steps 2 through 6 until estimated costs and estimated resources are equal.

  Note: Revision in estimated costs implies that components of the project must be modified; perhaps objectives (or their priorities) must be changed, or other sources of revenue must be sought.

  The Parent Advisory Committee and other decision-makers should participate in component modifications, as they did in developing the objectives and components to begin with. Only trivial changes should be made without involvement of decision-makers; even then, the decision-makers should be informed. (Worksheet 9 will assist in this process.)

Stage 2: Planning

- **Step 8** Analyze estimated costs/resources into budget categories by objective.

Worksheet 9
COST/RESOURCE ANALYSIS by OBJECTIVE
Step 8

Key Actions for Step 8:

a. Add the cost of the components that are designed to accomplish each objective. After this has been done, it will be noted that other components, not directly related to a program objective, i.e., administration and evaluation, remain unaccounted for. However, because these components are integral to the operation of the program and because they require funds, their costs can be allocated among the various program objectives.

For example: Component 1 (C-1), on sample Worksheet 5, is the Reading Instruction program. The costs for this component are shown on sample Worksheet 7. They are:

Personnel	– $5,200
Supplies	– 300
Other	– 200
C-1 Total	$5,700

Component 4 (C-4) on sample Worksheet 5 is *Administration* and C-5 is *Evaluation.* Both of these components have a budget, and their costs may be allocated across the various program objectives to provide an actual cost for each objective, that is, the cost of the program plus its administration and evaluation.

Continuing with the example cited above, it is determined that $2,000 of the Personnel Costs and $200 of "other" costs shown for C-4 on sample Worksheet 7 can be assigned to the accomplishment of C-1, the Reading Instruction program. Similarly, $600 of the $1,800 total cost of the evaluation contract (C-5) can be assigned to the Reading Instruction Program. Combining these costs for Component 1 results in:

	C-1		C-4		C-5		Total
Personnel	$5,200		$2,000				$7,200
Supplies	300						300
Contractual	0				$ 600		600
Other	200		200				400
Total C-1 Costs	$5,700	+	$2,200	+	$ 600	=	$8,500

Similar calculations can be made for each objective, by budget categories as well as the totals.

b. Enter the information from Key Action "a" on Worksheet 9.

- **Step 9** Establish project timetables.

Worksheet 10
PROJECT TIMELINES
Step 9

Key Actions for Step 9:

a. Develop or obtain from project director, or other responsible persons, the names (if known) or roles of the persons who will be responsible for implementing each component of the project.

b. Develop or obtain from project director the expected start dates and end dates for each component of the project.

Note: It is often very useful to further divide the components into subcomponents or activities. These should be defined in as much detail as necessary for managing and controlling the project once it is underway.

c. Develop or obtain from project director the intended target dates for accomplishment of each objective.

d. Enter on Worksheet 10 the information developed in Key Actions "a," "b," "c."

Stage 2: Planning

- **Step 10** Determine whether further defining of objectives, components, and/or costs is necessary.

Key Questions:

Is each of the objectives, as stated, so directly observable that a reasonably reliable and accurate measurement plan can be developed and implemented?

Is each of the components sufficiently defined that the evaluator knows exactly where to look for (i.e., where to measure) accomplishment of an objective in that component of the project?

Based on available time, skills, and decision-maker participation, is further defining of a given objective needed?

Key Action for Step 10:

Examining each stated objective/component linkage in turn, determine whether further defining is necessary before measurement planning can begin.

- **Step 11** (Defining Process) Further define each objective or component until sufficiently specific that accomplishment of objectives can be measured with reasonable reliability and accuracy.

Worksheet 11
DEFINING CHART
Step 11

Key Questions for Step 11:

What are the observable dimensions of each objective, and in which subcomponents of the program should the evaluator look for them to be occurring?

Key Actions:

a. Ask the decision-maker(s) (or persons designated by them) to further define each objective.

b. Further define each component by redoing Step 3 (Stage 2) for that component, substituting the word "subcomponent" for the words "main component" in Step 3.

c. Enter the results of the above Key Actions on a chart such as Worksheet 11.

d. Go to Stage 3. (Measuring the Process and Products).

With the completion of Steps 1 through 11 and Worksheets 4 through 11, Stage 2 will have been completed.

Worksheet 4
Stage 2: Planning -- Establishing Objectives, Components, and Costs
OBJECTIVES OF THE PROJECT

Decision-Maker: Project Director Date: January 10

Project: Big Sky Elementary Education Project

1st Priority Objective (0-1):
To enable each Indian student currently reading 2 or more years below grade level to gain 12 months for each 9 months instruction in reading.

2nd Priority Objective (0-2):
To teach the Indian students the history of the Cherokee nation, including names and qualities of famous Cherokees, major events, and relations between the Cherokee and the U.S. government.

3rd Priority Objective (0-3):
To offer to the Indian students the opportunity to learn the arts and crafts of their ancestors, especially jewelry-making.

4th Priority Objective (0-4):

5th Priority Objective (0-5):

6th Priority Objective (0-6):

7th Priority Objective (0-7):

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Worksheet 5
Stage 2: Planning – Establishing Objectives, Components, and Costs
COMPONENTS OF THE PROJECT

Decision-Maker: Parent Committee Chairman Date: January 15

Project: Big Sky Trail Elementary Education Project

C-1 Reading Instruction	C-2 History Instruction	C-3 Arts + Crafts
C-4 Administration	C-5 Evaluation	C-6
C-7	C-8	C-9

Worksheet 6
Stage 2: Planning - Establishing Objectives, Components, and Costs
OBJECTIVES/COMPONENTS LINKAGES

Decision-Maker: Project Director Date: January 22

Project: Big Sky Trail Elementary Education Project

OBJECTIVES

COMPONENTS	01	02	03	04	05	06	07
C-1	X						
C-2		X	X				
C-3		X	X				
C-4	X	X	X				
C-5	X	X	X				
C-6							
C-7							
C-8							
C-9							

(Expand or shrink this chart if necessary to accommodate the actual number of objectives and components of the project).

Worksheet 7
Stage 2: Planning Establishing Objectives, Components, and Costs
COST ESTIMATES BY COMPONENTS OF THE PROJECT

	Personnel	Travel	Supplies	Contractual	Other	Totals
C-1	5,200		300		200	5,700
C-2	8,000		600		200	8,800
C-3	7,200	700	400	2,100	100	10,500
C-4	8,000	400	200		300	8,900
C-5				1,800		1,800
C-6						
C-7						
C-8						
C-9						
TOTALS	28,400	1,100	1,500	3,900	800	35,700

Remarks:

(Revise this chart as necessary to accommodate actual budget categories used and actual number of components).

Worksheet 8
Stage 2: Planning - Establishing Objectives, Components, and Costs
ESTIMATED AVAILABLE RESOURCES AND COMPARISON WITH ESTIMATED COSTS

A. ESTIMATED AVAILABLE RESOURCES IN DOLLARS

Source	Personnel	Travel	Supplies	Contractual	Other	Totals
Local	3,000	200	1,100	-	-	4,300
Federal	25,400	900	400	3,900	800	31,400
Totals	28,400	1,100	1,500	3,900	800	35,700

B. ESTIMATED COSTS (FROM WORKSHEET 7) IN DOLLARS

Totals	28,400	1,100	1,500	3,900	800	35,700

Remarks:

(Revise this chart as necessary to accommodate actual budget categories used).

Worksheet 9
Stage 2: Planning—Establishing Objectives, Components, and Costs
COST/RESOURCE ANALYSIS BY OBJECTIVE

	Personnel	Travel	Supplies	Contractual	Other	Totals
O-1	5,200 (C-1) 2.000 (C-4) 7,200		300 (C-1)	600 (C-5)	200 (C-4) 200 (C-1) 400	8,500
O-2	8,000 (C-2) 2,000 (C-4) 10,000	200 (C-4)	600 (C-2) 100 (C-4) 700	600 (C-5)	200 (C-2) 100 (C-4) 300	11,800
O-3	7,200 (C-3) 4,000 (C-4) 11,200	700 (C-3) 200 (C-4) 900	400 (C-3) 100 (C-4) 500	2,100 (C-3) 600 (C-5) 2,700	100	15,400
O-4						
O-5						
O-6						
O-7						
O-8						
O-9						
TOTALS	28,400	1,100	1,500	3,900	800	35,700

(Revise this chart as necessary to accommodate actual budget categories used and actual number of components).

Worksheet 10
Stage 2: Planning–Establishing Objectives. Components. and Costs
PROJECT TIMELINES

COMPONENT	PERSON(S) RESPONSIBLE	MONTH OF THE PROJECT											
		Sept	Oct	Nov	Dec	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.
		1	2	3	4	5	6	7	8	9	10	11	12
C-1	Mary O'Day	←	—	—	—	—	—	—	—	—	→		
C-2	Richard Leary	←	—	—	—	—	—	—	—	—	→		
C-3	Early Dawn	←	—	—	—	—	—	—	—	—	→		
C-4	Robert St. Lawrence	←	—	—	—	—	—	—	—	—	—	—	→
C-5	Red Sunset	←	—	—	—	—	—	—	—	—	—	—	→
C-6													
C-7													
C-8													
C-9													

Expand or shrink this chart to accommodate actual number of components and subcomponents.

Worksheet 11
State 2: Planning– Establishing Objectives, Components, and Costs
DEFINING CHART

Decision Maker: Richard Leary Date: _____

Project: Big Sky Trail Elementary Education Project

Objective: To teach the Indian students the history of the Cherokee nation, including names and qualities of famous Cherokees, major events + relations between the Cherokee and the U.S. government.

Component: Cultural Awareness Clubs

Subobjectives	Observable Dimensions of the Subobjectives
1. To teach Cherokee students about their ancestors.	1. The Cherokee students will be able to list the names of at least two famous Cherokees. (e.g. Sequoya and Osceola and describe their contributions.)
2. To teach Cherokee students about the major events of Cherokee history	2. The Cherokee students will be able to describe the relations between Cherokees and colonists prior to American Revolution, the role of Cherokee in the Revolution + war of 1812, + the treatment of the Cherokee nation in the period 1838-1840. ("Trail of Tears")
3. To teach Cherokee students about the relations between the Cherokee and the U.S. government.	3. The Cherokee students will be able to discuss the impact of the Indian Removal Bill on the Cherokee nation, Osceola's protest, and the Cherokees' adoptation to life in Oklahoma.
4. To teach Cherokee students about the contributions of their ancestors	4. Cherokee students will be able to discuss the invention of the written Cherokee language as developed by Sequoya and the publication of the first Indian newspaper.
5. To give Cherokee students an appreciation for their heritage.	5. Cherokee students will express pride in their heritage and desire to learn more about it at the end of the school year.

Stage 3: Measuring the Process and the Products

Purpose

When some objectives and components of the project have been sufficiently specified so that the evaluator knows what to look for and where to look, the evaluation cycle then moves to the Measuring Stage. The purpose of this Stage is to produce one or more plans, approved by the decision-maker(s), for observing (measuring): (1) how well project activities are actually proceeding so that the plans may be implemented or revised, and (2) how well the objectives for the project are being accomplished. (These plans, or summaries of them, should be included in the Title IV application.) Further, this Stage includes the implementation of the measurement plans during the project funding period.

Measurement Planning and Instruments

Measurement is largely a question of disciplined observation. *The what, when, where, and how of observation must all be carefully considered by the evaluator and reviewed with decision-makers.* The evaluator's job here is to assure that the gathering and analysis of information includes a reasonable balance of evaluation accomplishments such as:

- a broad range of applicability/a limited focus.
- lengthy, detailed specifications of procedures/brief, simple outlines of processes.
- technical sophistication/practicability for field users.

Balancing technical competency and practical field conditions is important and it must be accomplished in the measurement planning stage. Measurement is useful only when it is accurate; and accuracy is only achieved through careful planning and administration.

A single handbook cannot describe in detail all existing measurement practices and this Handbook makes no attempt to do so. Instead, it focuses on *general skill* areas, and describes some *major types of instrumentation* which might be useful.

Two concerns which will have to be dealt with during analysis are *reliability* and *validity*. The following material only *briefly* describes how to determine these for instruments which are created. Again, if the evaluator has any questions about these topics, outside resources should be consulted (such as the Supplement to this Handbook).

Reliability: Because reliability is a necessary (but not sufficient) condition for accurate, consistent measurement, tests, scales, checklists, and other data sources should be checked for reliability before use. Some ways of assessing the consistency aspects of reliability for each of the major types of instruments are listed below:

Preliminary data analysis should identify inconsistencies. For example, do all teachers identify absenteeism in the same way, or is one teacher's "tardy" another's "absent?" When differences are observed, they should be corrected or redefined to more accurately depict the actual conditions. In the case of the "tardy/absent" example, for instance, the evaluator might create a new category, "number of students not present at the beginning of class." In subsequent measurement, if undertaken, the evaluator should encourage consistency in reporting.

With *direct observation*, the recording instrument (and the observers) can be checked for reliability by having other observers measure the sample situation and analyze results for consistency.

With *surveys*, the methods for assessing the reliability of surveys parallel those used by the publishers of standardized instruments. Some typical methods are:

- *Split-half* reliability checks: the instrument is divided randomly into halves and the results attained with each half are compared.
- *Parallel* and *equivalent* forms reliability checks: identical or similar forms of an instrument are compared.
- *Test-retest* checks: the instrument is applied and re pplied to measure its consistency.

With standardized instruments, the evaluator should check published reliability figures.

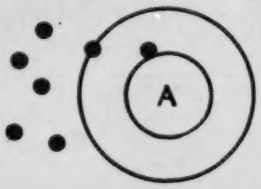
Validity: There are a number of types of validity with which the evaluator must concern himself. Although as many as six types of validity can be found in the evaluation literature, the three most common types are: *concurrent*, *content*, and *construct*, to which we will add the one most appropriate to this evaluation system – *"decision-maker."*

Concurrent –	How well does the instrument measure another existing state of performance?
Content –	How representative is the test or instrument of the reality or objective which is to be measured?
Construct –	How well does the instrument measure theoretical constructs? What factors is the test or instrument measuring?

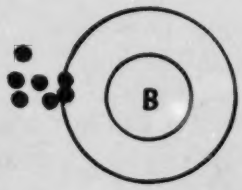
Decision-Maker – Does the instrument measure what the decision-maker wants to measure? How credible does the decision-maker think the measurement is?

Of course the concepts of reliability and validity are more complex than the preceding explanations suggest. An evaluator wishing to investigate these concepts more thoroughly might consult the Reference listings in the Selected Readings of the Supplement to this Handbook.

An analogy between target shooting and reliability and validity may help (taken in part from Kerlinger, 1964); this analogy is illustrated in patterns A, B, and C.



Judging from the pellet pattern, let's call the shot unreliable and invalid.



Judging from the pellet pattern, we can say that the shot is reliable, in that it is consistent, but invalid in that it misses the target – it doesn't hit what it's supposed to hit.

In the last case we can say that the shot is both reliable and valid – it hits what it is supposed to hit consistently and accurately. Measurement instruments should be like the shot used on target C.

The kinds of measurement are succinctly explained below. This listing is not complete, and these instruments may go by different names. The Supplement to this Handbook provides more in-depth discussion of evaluation techniques and also includes reference listings for further information and investigation. In brief, however, there are at least six kinds of measurement:

1. **Available Materials** (AM)
   The information required to make some decisions may already exist. Two major sources are in-house records (report cards/attendance figures/drop-out rates) and outside records (monographs, journals, and ERIC (Educational Research Information Clearinghouse), a national service which lists, classifies, and annotates educational research studies either publicly funded or filed for public disposition. Before designing instruments to collect information, a check should be made to see if data already exist.

   Although some data mentioned above are not formal measurement tools or instruments, some (such as attendance figures) are, however, measurable and thus can be used as forms of data for the measurement process.

   Objective: Decrease the drop-out rate at the Riverbend High School by 20 percent

within one year's time.

Measurement: Examine the school attendance records and compare the dropout rate for the 1973-74 school year with the dropout rate for the 1974-75 school year.

2. **Direct Observation (DO)**

Generally, the best measurement device is one which allows a person to directly observe well-defined behaviors or states. This is the type of instrument well suited to the evaluation system being presented in this Handbook. Frequently it is not possible to use this approach because resources do not allow for it, or non-observable information, such as opinions or attitudes, is desired.

Objective: To have children actively participate in cultural education presentations by experts on Native American culture.

Measurement: Direct observation of a number of presentations. Observers may use checklists for the number of questions asked by students during presentation, number of voluntary comments made by students, number of disciplinary measures taken by teachers during presentation, number of statements made by teachers to encourage participation, number of actions taken by students that illustrate inattention to presentation. Method of observation of these qualities may vary from a group analysis to systematic timed observation of each participant and recording of actions during that time period.

3. **Surveys (S)**

Use of surveys is probably the most typical means of collecting information for decision-making. There are two major types of surveys – those that use self-administered questionnaires and those that use interviews. Surveys are usually prepared locally, although many standardized ones exist.

Objective: To have at least 80 percent of the participants in the Drop-in (anti-dropout) Program respond affirmatively when asked if they would like the program to be continued for the next year.

Measurement: Students are interviewed and posed the above question.

4. **Standardized Instruments (SI)**

This category includes:

- intelligence and aptitude tests
- tests of achievement (skill, ability, and performance tests)
- personality measures

- attitudes scales

- criterion-referenced tests

- miscellaneous forms of instrumentation not categorized by the above, such as interest inventories or ethnocentrism scales.

Objective: 95 percent of students in the anti-dropout program leave the program with an eighth-grade reading level.

Measurement: SRA Reading tests are given in the Fall diagnosis and in the Spring for assessment of progress.

5. **Nonstandardized Tests** (NS)

Teacher-made tests are typically prepared for classroom use to measure learning objectives. Learning objectives may be classified according to the three modes by which people learn: cognitive (mental), affective (emotional), and psychomotor (physical action). These tests may be produced by using available guidelines for the above-mentioned categories.

Objective: Each student will know basic facts of Native American history as presented in a class on Native American history.

Measurement: The instructor will compose examinations over the material presented in class; students' grades on these examinations will be taken to reflect inculcation of knowledge about Native American history.

In deciding which form(s) of these five kinds of measurement should be used in assessing accomplishment of each objective, the evaluator must keep practical and theoretical considerations in mind. He or she should investigate the observable dimensions listed by the decision-makers and ask himself/herself what kind of measure would most accurately record each of those dimensions. If data already exist in the form of records, test scores, etc., these should be used, if they are determined to be reliable, valid, and complete. Use of available materials reduces the costs associated with conducting the evaluation.

If appropriate data are not available, the evaluator must then ask which of the forms of measurement would most directly capture the information. For some objectives, perhaps only observation will suffice, e.g., in assessing classroom interaction and behavior. For other objectives, such as gains in knowledge, tests (standardized or nonstandardized) would be appropriate. For still others, the survey – interview or written questionnaire – would be the most direct form of measurement,, such as obtaining opinions, beliefs, and preferences.

Choices and measurement, of course, are governed by factors of cost and time; the evaluator may, for example, prefer to use interviews but find the expense prohibitive. A written questionnaire may therefore have to be used as a compromise measure.

Sampling

In the implementation of measurement it is often not desirable to measure every subject or to judge every product. Quality testing of light bulbs and polling of voters about their candidate

preferences are two common modern-day examples where the measurement of all items or subjects is not desirable.

Obtaining information on less than the total population being observed or measured is known as *sampling*. Sampling can save much expense in data collection and can add to the quality of the control of the data collection by decreasing the management task.

If one simply decides to measure half of the class in a given situation, then he/she is sampling the class. However, if students who are to be given tests are chosen either on a first-come basis or according to some form of dress or behavior, then there is a question as to whether the group chosen is typical of the whole class. The use of random process to eliminate bias and to assure representativeness of the sample can reduce significantly the number of persons or products assessed.

There are several kinds of sampling and several excellent texts on sampling. Five such types of samples appear as useful tools for the evaluator. They are: (1) simple random, (2) stratified random, (3) judgment, (4) subject or domain, and (5) time.

Simple random sampling is a method of selecting a fixed number of units from a population so that each one of the units has an equal chance of being selected. The sampling process usually involves making a numbered list of the units in the population and then selecting the number of units needed to meet the sample size in the order that unit numbers appear in a "random number table"; random number tables may be found at the back of most statistics books.

Stratified sampling consists of obtaining a sample population representative of the total population insofar as particular component groups are concerned. For example, suppose there is a population of 100 administrators, teachers, teachers' aides, and volunteers, with a percentage distribution of 70 percent, 20 percent, 5 percent and 5 percent, respectively. If the evaluator wanted to have a set of opinions representative of the different levels of the educational hierarchy, he/she would subdivide the population and draw subsamples for each to reflect the proportional distribution (70%, 20%, 5%, and 5%).

Judgment samples are often called subjective or purposive. They involve the inclusion of particular elements, units, or subjects which would contribute uniquely to the sample and which are required for the sample. These unique elements, units, or subjects are taken intentionally, or with certainty. Often the judgment samples include a combination of random sampling and intentional selection. In an Indian Education Act project, for instance, the evaluator would want to intentionally select as part of the sample of project personnel the project director since he/she is in a unique position, whereas other staff might be selected on a random basis.

Subject or domain sampling attempts to partition a body of information into groups such that samples in these groups of information can be put together into a test. In the building of a reading test, it is impossible to include test items for all material covered in a reading course at a given grade level. Instead, the developers of a reading test for a given grade level divide the type of material by the types of skills being taught in the reading instruction and by the intended objectives of the instruction. Items are then selected from each of the areas designated so that an equal distribution of items occurs for each area of instruction and skill.

Time sampling is most useful in assessing the impact of an event or set of events. In a general way, pretests at the beginning of the year and post-tests at the end are examples of measurement using time sampling. But time sampling can be used in a more limited time period and with greater frequency as well. For instance, if one wanted to measure attention spans to special lectures on Hopi customs, he/she might observe class behavior at the beginning, in the middle, and near the end of the lecture.

One must be cautious in using any of the five kinds of measurement outlined above because it

is necessary that measurement be tied to the *real* intents of the project. A test, however elegant or widely used, which is not really geared to measuring achievement of project goals is (at best) of little use and (at worst) harmful.

Measurement Implementation

When measurement instruments are selected that are consistent with measurement plans, these plans are then ready to be carried out. After final arrangements have been made and schedules set, plans are ready to be put into effect. The evaluator then documents the implementation, noting and trying to solve any interferences or resistances that may occur, such as:

- Standardized tests or needed videotape equipment might take longer to order than the plans anticipated;
- Fewer questionnaires are returned than was anticipated; or
- Someone who is needed to carry out the plans falls ill.

Documenting the problems and solutions means, in effect, documenting the deviations from the plans approved by the decision-makers for whom the information is being gathered. Seeking their approval of the modification, if major, is advisable. Documenting what happens will help the evaluator explain the measurement process when the information is subsequently reported.

Some suggested activities for measurement implementation include:

- Scheduling the times for reviewing available materials, observing, interviewing, surveying, and testing;
- Making final arrangements with the appropriate people regarding scheduled measurement form (for example, observation);
- Enacting the plan(s) for measurement;
- Monitoring the implementation of measurement plans and recording any problems encountered;
- Modifying the implementation, if necessary and possible, in order to solve problems that arise.

Stage 3: Measuring

- **Step 1** What questions should be asked and answered in developing a measurement plan for each component? (The evaluator adds other questions and answers them as the project progresses.)

Worksheet 12
MEASUREMENT PLANNING QUESTIONS
Step 1

- **Step 2** Provide a number and title for each separate measurement (evaluation) plan with the specific information required to identify the plan. Obtain the object, component, and dimension definitions from Worksheets 4, 5, and 11. Worksheets 14 and 15 will need to be completed for each numbered measurement plan.

Worksheet 13
MEASUREMENT PLAN IDENTIFICATION
Step 2

A KEY POINT
for MEETING
with
DECISION-MAKERS

Stage 3: Measuring

- **Step 3** Draft a plan for evaluating (measuring) the degree of accomplishment for each of the project's objectives, components, and dimensions selected for measurement by the decision-makers, as shown on Sample Worksheets 5, 6, and 11.

Worksheet 14
MEASUREMENT PLAN
Step 3

Key Action for Step 3:

Complete a separate measurement plan (as for Worksheet 13) for each component or dimension that is to be evaluated separately, e.g., the reading *achievement* (an objective) resulting from *reading aloud* (a component) may have a separate measurement plan from *reading silently for comprehension* (another component).

Stage 3: Measuring

- **Step 4** Make final arrangements with appropriate people for observation.

Key Questions for Step 4:

What arrangements need to be made to conduct each measurement plan?

Are the persons to be observed (or other appropriate people – like teachers and staff) ready to help with the measurement plans?

- **Step 5** Field test the instrument.

Worksheet 15
DOCUMENTATION OF IMPLEMENTATION
Steps 4 and 5

Key Questions for Step 5:

Does the instrument work?

Is it reliable and valid?

Do modifications have to be made?

Stage 3: Measuring

- **Step 6** Monitor the implementation of measurement plans, recording any problems encountered.

Worksheet 15A
IMPLEMENTATION PROBLEMS AND SOLUTIONS
Steps 6 and 7

Key Questions for Step 6:

Is the measurement being performed according to plan?

Are observers and administrators of instruments voicing concerns in regard to the effectiveness of the implementation?

Are deficiencies being reported?

- **Step 7** Modify the implementation, if necessary and possible, in order to solve problems that arise.

Worksheet 15B
DECISION and DECISION-CHANGE INFORMATION CHARTS
Step 7

Key Question for Step 7:

What modifications are needed in the evaluation instruments or the way in which they are administered?

Key Actions:

a. Submit the instrument to an appropriate decision-maker for approval.

Key Question: Does the decision-maker have confidence that the instrument will provide information that he or she can use?

b. Have the instrument reviewed by a measurement specialist, if possible.

Key Question: Are there flaws in the instrument which can be corrected to improve its reliability and validity?

c. Apply the instrument to selected persons as a field test.

Key Questions:

Is the instrument understandable by persons who resemble those with whom the instrument will eventually be used?

Do these persons detect any gaps or irrelevant material or inconsistencies?

d. Record results of the review and field test on Worksheet 15.

When Steps 1 through 7 and the tasks for Worksheets 12 through 15B have been accomplished, Stage 3 will have been completed.

Worksheet 12
Stage 3: Measuring the Process and Products
MEASUREMENT PLANNING QUESTIONS

Does the required information already exist? No

–Can the dimensions of an objective be grouped in such a way that a number of them can be measured at the same time? Yes

–What is the most direct way to observe the dimension or dimensions? Survey

--Are there existing ways to measure the dimensions so that instruments do not have to be newly designed? No

– If necessary, can the evaluator design the ways to measure the dimensions? Interviews can be us

- Will the measurement device to be used require a high degree of inference on the part of the observer? No.

Workshop 13
Step 3: Measuring the Process and Products
MEASUREMENT PLAN IDENTIFICATION

Primary Decision-Maker: Richard Leary

Plan Number 3 Date January 23

Project Name Big Sky Trail Elementary Education Project

Objective to be measured To teach the Indian students the history of the Cherokee nation including names & qualities of famous Cherokees, major events, & relations between the Cherokees & the U.S. government.
Sub-objective: To give Cherokee student an appreciation of their heritage.

Component to be measured Cultural Awarness Clubs

Observable Dimension Cherokee students will express pride in their heritage and desire to learn more about it at the end of the school year.

Worksheet 14
Stage 3: Measuring the Process and Products
MEASUREMENT PLAN

Plan Number 3

Type of plan:

- ☐ Existing Records
- ☐ New Record Keeping
- ☑ Survey
- ☐ Standardized Test
- ☐ Nonstandardized Test
- ☐ Sample
- ☐ Other

Multiple measures used: ☐ Yes ☑ No

Statistics to be used:

Counts / Percents of responses

Attach description of the evaluation instrument to be used and of how the data are to be presented.

Attach description of the procedures to be used. Interviewer will ask student to describe what he/she has gotten out of being in cultural awareness club in terms of pride in heritage and will ask student whether he/she would like to learn more.

Attach description of the known problems.

Type of sampling (if used):

No sampling used; all students to be interviewed

- ☐ Simple random
- ☐ Stratified random
- ☐ Judgment
- ☐ Subject
- ☐ Time

Attach description of sampling plan.

Type of reporting:

- ☑ Written Narrative (by interviewer)
- ☐ Cassette
- ☐ Film
- ☐ Film Strips
- ☐ Graphics
- ☐ Other

Worksheet 15
Stage 3: Measuring the Process and Products
DOCUMENTATION OF IMPLEMENTATION

Plan Number 3

Has the measurement plan been submitted for review by a measurement specialist?
☐ Yes
☑ No

Name of specialist: _____

Date reviewed: _____

Were modifications suggested:
☐ Yes
☑ No

Was a field test performed?
☐ Yes
☐ No

Attach a description of the field test and results.

Complete Worksheet 15A: Implementation Problems of Evaluation and Solutions.

Complete Worksheet 15B: Decisions and Information Chart.

The measurement plan was presented for the decision-maker's review on January 25 **(date).**

Were modifications requested?
☑ Yes
☐ No

The plan was approved by the decision maker on: January 28 **(date).**

Worksheet 15A
Stage 3: Measuring the Process and Products
IMPLEMENTATION PROBLEMS AND SOLUTIONS

PROBLEMS (Describe in detail)	SOLUTIONS (Describe in detail)
No evidence of reliability or validity of child's responses	Since time does not exist for field test of survey, acknowledge reliability + validity problems in write-up of report + support with data collected by other projects, if available.
Children may have difficulty in articulating ideas	Use interviewers who are skilled in eliciting responses from elementary school children + yet who will be trained to refrain from biasing probing questions.
Data will be nonuniform regarding area of pride	Assess responses as they are obtained + look for general ways of classifying them. Submit classification scheme to different judges to make sure there is adequate agreement of the responses.

Worksheet 15B
Stage 3: Measuring the Process and Products
DECISIONS AND INFORMATION CHART

Decision Maker: Richard Leary Date: July 1

Project: Big Sky Trail Elementary Education Project

Period covered by this chart: ___ From: Nov. To: June

(Decisions for which some information was reported)	Program changes that could affect achievement of project objectives and/or evaluation	Reason for Change
11/6	Meeting times of cultural awareness clubs changed from after-school to during school	Leary found there were transportation problems for Cherokee students who stayed for after school meetings, as he appealed to Cherokee Council for change in meeting time so more students could participate.
3/1	Meetings discontinued for month of March.	Meeting room used for special examinations.

Stage 4: Preparing the Data

Purpose

This Stage is intended to analyze, interpret, and indicate the quality of the data identified, collected, and measured in Stages 1, 2, and 3.

When all evaluation activities have been completed, the evaluator frequently finds a mass of data in a variety of forms. These data must be prepared for appropriate use to meet the requirements specified for each of the evaluation activities related to a particular objective or component of the project. Once the data are grouped into packages that relate to the specific measurement plans (see Worksheets 11-15B), they must be analyzed and presented in meaningful form. They should then be edited carefully for completeness and accuracy.

Next, the evaluator must summarize the data. This can best be done by listing the data formats and analysis in a sequence following the numbered measurement plans. When this list is completed and all activities are included, the evaluator should review and determine the quality of the data.

In some instances, it will be necessary to omit data from consideration because they are not complete and/or not representative or generalizable. This omission will preclude misleading interpretations on the part of the decision-maker. If sufficient time remains within project timelines, these data can be collected again. If, however, there is not sufficient time, reasons for omitting data should be stated and well documented. Notes should be made for future projects as an aid in avoiding replication of the types of errors encountered in evaluating the current project.

Conclusions of the evaluation activity in *statistical* or *narrative* form are not always adequate to assist decision-makers. It is, therefore, important that an *interpretation* be made of the data, indicating the kinds of assumptions for future programs and projects that might reasonably emerge from the data analysis. At this point it is frequently in the best interest of the project to use specialists in interpretation. The specialist may have skills and insight from other research that will lend greater depth to the analyses than could be obtained by the local evaluator alone.

Stage 4: Data Analysis

- **Step 1** Prepare and complete a form for presenting the data for review.

  The illustration is only one example of the infinite number of potential presentation formats. Each separate presentation format should be designed to include information collected for particular purposes in a complete, accurate, and meaningful form. In the design of the format, one is looking for general trends in the data (as illustrated by the new totals in Worksheet 16), as well as differences between designated groups in terms of their responses on observable dimensions (as illustrated in the top figures in Worksheet 16). The latter is often referred to as cross-tabulation.

  Worksheet 16
  ANALYSIS of DATA
  Step 1

- **Step 2** Prepare a summary of all of the data and indicate their quality.

  This listing, with comments, should include all data with documented changes suggested in each measurement plan. (Worksheet 13).

  Worksheet 17
  SUMMARY of DATA
  Step 2

- **Step 3** Trained evaluators and special consultants should prepare reports with conclusions and implications of data (such as those revealed in Worksheet 16) for possible project replication or modification for the local school system and for other school systems.

  Worksheet 18
  INTERPRETATION of DATA
  Step 3

After the completion of Steps 1 through 3 and Worksheets 16 through 18, Stage 4 will have been completed.

Worksheet 16
Stage 4: Preparing the Data
ANALYSIS OF DATA

Instructions: at 1 Fill in title of Table
at 2 Fill in subject of what is being analyzed. (i.e., pupils, schools, tests, etc.)
at 3 Fill in particular parts by names of general subject in 2
at 4 Fill in name of particular category being analyzed.

1 Analysis of Big Sky Trail Cherokee Student References for learning more about their history

2 Kinds of Students	Total Numoer in Group	Number of People Fitting into Each Analytic Category						Percent of Sample Fitting into Each Analytic Category					
		4 Like to learn more about Cherokee History		Not like to learn more about Cherokee history		No Response		4 Like to Learn More		Not like to Learn more		No Response	
3 Students who participated in cultural awareness club all year long	30		24		6		0		80		20		0
Students who joined cultural awareness club in mid-year	24		19		5		0		80		20		0
Students who dropped out of cultural awareness club	22		4		16		2		18		73		9
Students who never enrolled in club.	14		4		6		6		28		28		44
	80 TOTAL		51		31		8		64		26		10

*This section of the worksheet is intended to allow the evaluator to show variations in the group of people being studied in terms of responses to a survey, question, levels of performance on tests, or results of other research phenomena.

Worksheet 17
Stage 4: Preparing the Data
SUMMARY OF DATA

Name of Project Big Sky Trail Elementary Education Project

Number of Plan 1 and 2 and 3

Data	Source	Statement of Quality
Plan 1		
CTBS Reading	Basic Battery Elementary (needs assessment)	456 or 440 students GPA mentioned 24 found
CTBS Reading	Post test / Basic	Post test / Reading group O.K.
Plan 2		
Jewelry judge rating of jewelry	work samples	$r = .92$ Validity based on market
Art instruction grading jewelry components	work samples	—
Plan 3		
History test Attitude Scale	teacher consulting psychologist	Item analysis Regression Analysis Input
Opinionnaire on whether students would like to learn more about their history	Evaluation	—

Continue for each set of data and each plan using as many pages as needed.

Worksheet 18
Stage 4: Preparing the Data
INTERPRETATION OF THE DATA

Project Name Big Sky Trail Elementary Education Project

The project evaluator should prepare a report interpreting the data (attach report with date of completion).

Specialists (content, behavior, cost, administrative, statistical, etc.) should prepare reports if such reports are determined by the project's evaluator or decision-makers as necessary.

No 10-12 month gain observed in reading (see Table #1); objective not met - Program should continue / objective set too high.

Jewelry class overprescribed - need to enlarge jewelry of marketable quality.

80% of the cultural awareness club participants learned the history to a satisfactory level and pride in their heritage was enhanced. Those who joined the cultural awareness club at the beginning of the year or in mid-year were far more likely to want to learn more about their heritage than those who dropped out or never joined. On the whole, 64% of all Cherokee students, members + non members, wished to learn more.
Cultural awareness clubs should be continued with an eye toward increasing participation among drop-outs and non-joiners (might also study reasons for dropping out or not joining).

Stage 5: Reporting Information

Purpose

The Reporting Stage is intended to deliver reports of information for use by the decision-makers, for whom information was collected, and by other audiences.

Since the ultimate purpose of the project evaluation is to provide useful information for decision-making, then reporting the information to decision-makers is a vital step. Of what use is information which is not understandable to a decision-maker? Of what use is information which is presented too late? The answers are obvious.

It should be remembered that reports are not always given in writing (or *only* in writing) and that reports can be given sometimes by audiovisual means, such as exhibits, photographs, and slide-tape shows. Remember, too, that reporting to the U.S. Office of Education will be in a form prescribed by that agency.

It is important that a record be made of all items delivered. In this way it is possible to document whether or not decision-makers have received what they appropriately need, in time for their use.

MEETING WITH DECISION-MAKERS

- **Step 1** Record the delivery of information to the appropriate decision-maker.

Worksheet 19
REPORTING INFORMATION
Step 1

1.58 blank

Worksheet 19
Stage 5: Reporting Information
REPORTING INFORMATION

Decision-Maker	Name of Person Receiving Items	Date Delivered	Number of Copies/Items	Name of Report/Item
RS	O'Day	Oct 1		Pretest CTBS
AI	Dawn	Oct 1		Jewelry Rating
CACS	Leary	Oct 1		Pretest on Clothes history
AI	Dawn	Nov. 1		Bead rating
AI	Dawn	Feb 1		Sand stone Painting
CACS	Leary	Apr. 15		Interview on Sat. pride + desire to learn more
RS	O'Day	June 1		Post-test CTBS
AI	Dawn	June 1		Jewelry rating
CACS	Leary	June 15		Statistical summary
RS	O'Day	June 15		Statistical summary
AI	Dawn	June 15		Statistical summary
PD	St. Laurence	June 15		Statistical summary
PCC	Raven	June 15		Statistical summary
P	Leman	June 15		statistical summary
S	Stoat	June 15		statistical summary
CSB	Moneybag	June 15		statistical summary
OIE	Smith	June 15		statistical summary

CONCLUSION

This Handbook on Evaluation has been designed as an instrument to be used with Title IV programs. Its purpose is to provide a series of instructional aids for use in establishing and completing a systematic evaluation process. Through such evaluation it will become apparent which program objectives are being met and which ones are falling short of expectation.

Good programming depends on evaluation. Each local project has distinctive characteristics and unique community interests, all of which will be reflected in the kinds of community and parent input that will determine the planning and operation of project programs. This Handbook, however, is designed to be flexible enough not only to allow for these differences but to use this diversity as a base for developing systematic evaluation. Whether or not every suggested Step, Question, Action, and Worksheet is suitable and useful in the evaluation of a particular project, the five Stages of Evaluation remain:

1. Focusing the Evaluation Effort;
2. Establishing Objectives, Components, and Costs;
3. Measuring the Process and Products;
4. Preparing the Data; and
5. Reporting the Information.

This Handbook does not examine the wide variety of particular uses to which project evaluation may be put, except in the most general terms. It is taken for granted that good evaluation will result in better programs. And better programs will benefit the Indian school children who, after all, are the focus for the programs and the reason for their existence.

Appendix – Set(s) of Evaluation Worksheets

Worksheet #1
Stage 1: Focusing the Evaluation Effort
PROJECT IDENTIFICATION AND CRITICAL DATES

Date:

Title IV application due date: _____

Project planning period: from _____ to _____

Project implementation (funding) period: from _____ to _____

Evaluation design for application must be completed by _____ (date)

Name of the project: _____

_____

_____

Name(s) of the evaluator(s): _____

_____

_____

List of decision-makers to be served by the evaluation effort:

1.
2.
3.
4.
5.
6.
7.
8.

Worksheet 2
Stage 1: Focusing the Evaluation
DESCRIPTIVE INFORMATION

Describe the setting in which the project is to be conducted:

Describe the project:

Worksheet 3
Stage 1: Focusing the Evaluation
ADDITIONAL FOCUSING INFORMATION

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Worksheet 4
Stage 2: Planning – Establishing Objectives, Components, and Costs
OBJECTIVES OF THE PROJECT

Decision-Maker: _____ Date: _____

Project: _____

1st Priority Objective (0-1):

2nd Priority Objective (0-2):

3rd Priority Objective (0-3):

4th Priority Objective (0-4):

5th Priority Objective (0-5):

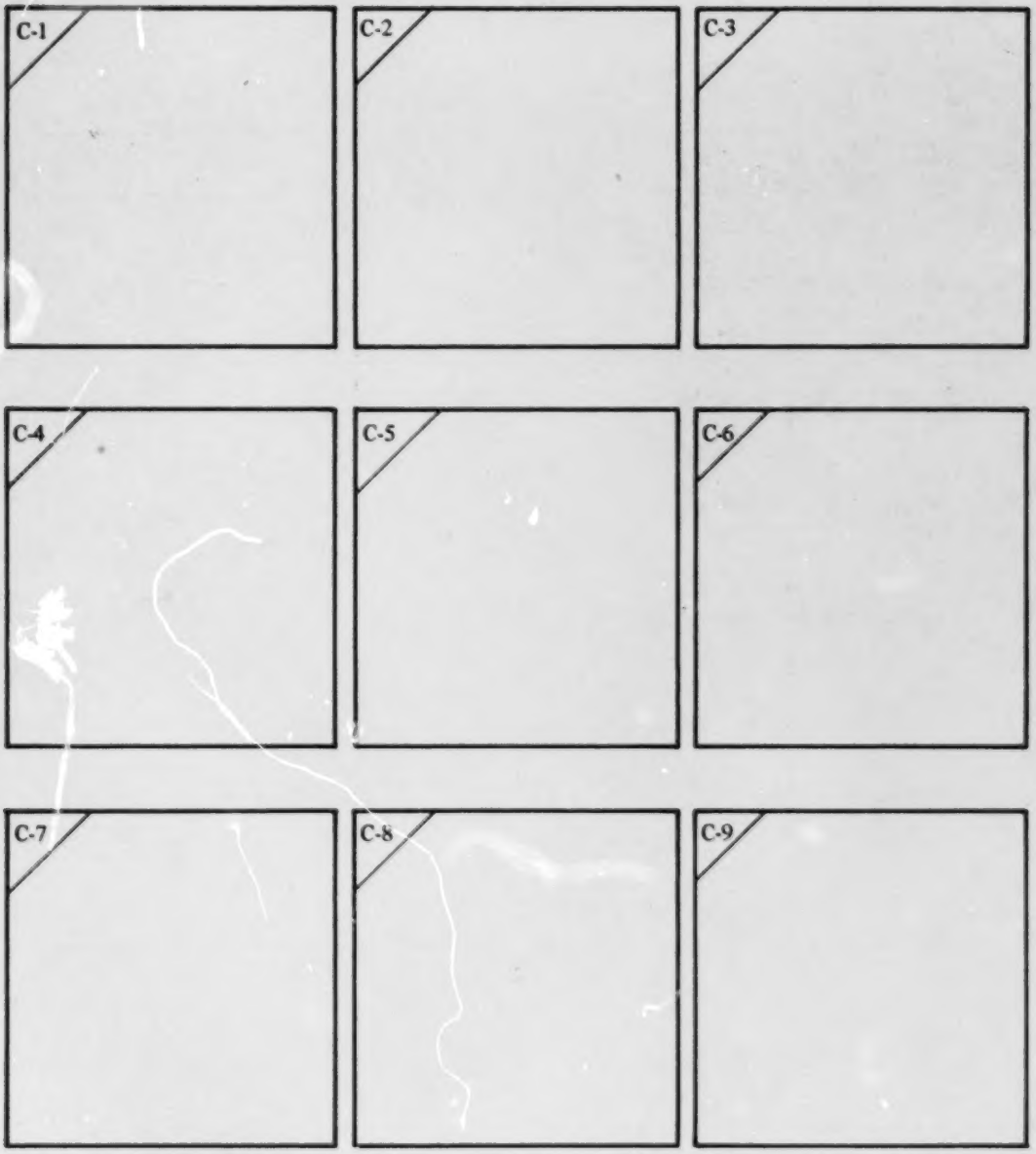
6th Priority Objective (0-6):

7th Priority Objective (0-7):

Worksheet 5
Stage 2: Planning–Establishing Objectives, Components, and Costs
COMPONENTS OF THE PROJECT

Decision-Maker: _____ Date: _____

Project: _____



Worksheet 6
Stage 2: Planning–Establishing Objectives, Components, and Costs
OBJECTIVES/COMPONENTS LINKAGES

Decision-Maker: _____ Date: _____

Project: _____

OBJECTIVES

COMPONENTS	01	02	03	04	05	06	07
C-1							
C-2							
C-3							
C-4							
C-5							
C-6							
C-7							
C-8							
C-9							

(Expand or shrink this chart if necessary to accommodate the actual number of objectives and components of the project).

Worksheet 7
Stage 2: Planning– Establishing Objectives, Components, and Costs
COST ESTIMATES BY COMPONENTS OF THE PROJECT

	Personnel	Travel	Supplies	Contractual	Other	Totals
C-1						
C-2						
C-3						
C-4						
C-5						
C-6						
C-7						
C-8						
C-9						
TOTALS						

Remarks:

(Revise this chart as necessary to accommodate actual budget categories used and actual number of components).

70

Worksheet 8
Stage 2: Planning–Establishing Objectives, Components, and Costs
ESTIMATED AVAILABLE RESOURCES AND COMPARISON WITH ESTIMATED COSTS

A. ESTIMATED AVAILABLE RESOURCES IN DOLLARS

Source	Personnel	Travel	Supplies	Contractual	Other	Totals
Local						
Federal						
Totals						

B. ESTIMATED COSTS (FROM WORKSHEET 7) IN DOLLARS

Totals						

Remarks:

(Revise this chart as necessary to accommodate actual budget categories used).

Worksheet 9
Stage 2: Planning–Establishing Objectives, Components, and Costs
COST/RESOURCE ANALYSIS BY OBJECTIVE

	Personnel	Travel	Supplies	Contractual	Other	Totals
O-1						
O-2						
O-3						
O-4						
O-5						
O-6						
O-7						
O-8						
O-9						
TOTALS						

(Revise this chart as necessary to accommodate actual budget categories used and actual number of components).

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Worksheet 10
Stage 2: Planning–Establishing Objectives, Components, and Costs
PROJECT TIMELINES

COMPONENT	PERSON(S) RESPONSIBLE	MONTH OF THE PROJECT											
		1	2	3	4	5	6	7	8	9	10	11	12
C-1													
C-2													
C-3													
C-4													
C-5													
C-6													
C-7													
C-8													
C-9													

Expand or shrink this chart to accommodate actual number of components and subcomponents.

Worksheet 11
State 2: Planning–Establishing Objectives, Components, and Costs
DEFINING CHART

Decision Maker: _____ Date: _____

Project: _____

Objective: _____

_____

Component: _____

Subobjectives	Observable Dimensions of the Subobjectives
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Worksheet 12
Stage 3: Measuring the Process and Products
MEASUREMENT PLANNING QUESTIONS

–Does the required information already exist?

–Can the dimensions of an objective be grouped in such a way that a number of them can be measured at the same time?

–What is the most direct way to observe the dimension or dimensions?

–Are there existing ways to measure the dimensions so that instruments do not have to be newly designed?

–If necessary, can the evaluator design the ways to measure the dimensions?

–Will the measurement device to be used require a high degree of inference on the part of the observer?

Workshop 13
Step 3: Measuring the Process and Products
MEASUREMENT PLAN IDENTIFICATION

Primary Decision-Maker: _____

Plan Number _____ Date _____

Project Name _____

Objective to be measured _____

_____

_____

_____

_____

Component to be measured _____

_____

_____

_____

_____

_____

Observable Dimension _____

_____

_____

_____

_____

_____

Worksheet 14
Stage 3: Measuring the Process and Products
MEASUREMENT PLAN

Plan Number _____

Type of plan:

- ☐ Existing Records
- ☐ New Record Keeping
- ☐ Survey
- ☐ Standardized Test
- ☐ Nonstandardized Test
- ☐ Sample
- ☐ Other

Multiple measures used: ☐ Yes ☐ No

Statistics to be used:

Attach description of the evaluation instrument to be used and of how the data are to be presented.

Attach description of the procedures to be used.

Attach description of the known problems.

Type of sampling (if used):

- ☐ Simple random
- ☐ Stratified random
- ☐ Judgment
- ☐ Subject
- ☐ Time

Attach description of sampling plan.

Type of reporting:

- ☐ Written Narrative
- ☐ Cassette
- ☐ Film
- ☐ Film Strips
- ☐ Graphics
- ☐ Other

Worksheet 15
Stage 3: Measuring the Process and Products
DOCUMENTATION OF IMPLEMENTATION

Plan Number _____

Has the measurement plan been submitted for review by a measurement specialist? ☐ Yes ☐ No

Name of specialist: _____

Date reviewed: _____

Were modifications suggested: ☐ Yes ☐ No

Was a field test performed? ☐ Yes ☐ No

Attach a description of the field test and results.

Complete Worksheet 15A: Implementation Problems of Evaluation and Solutions.

Complete Worksheet 15B: Decisions and Information Chart.

The measurement plan was presented for the decision-maker's review on _____(date).

Were modifications requested? ☐ Yes ☐ No

The plan was approved by the decision maker on: _____ (date).

Worksheet 15A
Stage 3: Measuring the Process and Products
IMPLEMENTATION PROBLEMS AND SOLUTIONS

PROBLEMS (Describe in detail)	SOLUTIONS (Describe in detail)

Worksheet 15B
Stage 3: Measuring the Process and Products
DECISIONS AND INFORMATION CHART

Decision Maker: _____ Date: _____

Project: _____

Period covered by this chart: ____From: _____ __To: _____

Program changes that could affect achievement of project objectives and/or evaluation	Reason for Change
(Decisions for which some information was reported)	

Worksheet 16
Stage 4: Preparing the Data
ANALYSIS OF DATA

Instructions: at 1 Fill in title of Table
at 2 Fill in subject of what is being analyzed, (i.e., pupils, schools, tests, etc.)
at 3 Fill in particular parts by names of general subject in 2
at 4 Fill in name of particular category being analyzed.

1

2	Total Number in Group	Number of People Fitting into Each Analytic Category						Percent of Sample Fitting into Each Analytic Category					
		4						4					
3													
TOTAL													

*This section of the worksheet is intended to allow the evaluator to show variations in the group of people being studied in terms of responses to a survey, question, levels of performance on tests, or results of other research phenomena.

Worksheet 17
Stage 4: Preparing the Data
SUMMARY OF DATA

Name of Project _____

Number of Plan _____

Data	Source	Statement of Quality

Continue for each set of data and each plan using as many pages as needed.

Worksheet 18
Stage 4: Preparing the Data
INTERPRETATION OF THE DATA

Project Name _____

The project evaluator should prepare a report interpreting the data (attach report with date of completion).

Specialists (content, behavior, cost, administrative, statistical, etc.) should prepare reports if such reports are determined by the project's evaluator or decision-makers as necessary.

Worksheet 19
Stage 5: Reporting Information
REPORTING INFORMATION

Decision-Maker	Name of Person Receiving Items	Date Delivered	Number of Copies/Items	Name of Report/Item